[NAME OF THE DOCUMENT] ABSTRACT

[SUMMARY]

[PROBLEM]

This invention provides a composite motor which can greatly increase the rigidity of the stator and to simplify cooling.

[MEANS FOR SOLUTION

A first rotor 15 and a second rotor 17 are disposed coaxially. A plurality of armature coils of the stator 13 which are disposed on an outer periphery of the first rotor 15 are opposed to the first rotor 15. Respective magnetic fields generated by the plurality of armature coils of the stator 13 are transmitted to the second rotor 17 using a magnetic body comprising a first core 19, a second core 21 and a third core 23. Thus it is possible to stop the torque repulsive force generated by the rotation of the first rotor 15 and the second rotor 17 with the case 39 through the stator 13.

[SELECTED FIGURE] Fig. 1

[DESCRIPTION OF THE FIGURES]

[FIG. 1]

| | |
|---|---|
| 11 | COMPOSITE MOTOR |
| 13 | STATOR |
| 15 | FIRST ROTOR |
| 17 | SECOND ROTOR |
| 19 | FIRST CORE |
| 21 | SECOND CORE |
| 23 | THIRD CORE |
| 37 | WEDGE |
| 39 | CASE |
| 41 | STOPPER |
| 43 | INTERMEDIATE RING |
| 51 | FIRST ROTATION SHAFT |
| 53 | FIRST BEARING |
| 55 | SECOND BEARING |
| 57 | SECOND ROTATION SHAFT |
| 59 | THIRD BEARING |
| 61 | FOURTH BEARING |

[FIG. 2]

| | |
|---|---|
| 13 | STATOR |
| 15 | FIRST ROTOR |
| 17 | SECOND ROTOR |
| 19 | FIRST CORE |
| 21 | SECOND CORE |
| 23 | THIRD CORE |
| 24 | CONNECTING PART |
| 25 | INDENTATION |
| 27 | PROJECTION |
| 29 | CASE MEMBER |
| 31 | FIRST WJ |
| 33 | SECOND WJ |
| 35 | BOLT HOLE |
| 37 | WEDGE |
| 45 | MAGNETIC SHIELD |

[FIG. 3]

| | |
|---|---|
| 19 | FIRST CORE |
| 71 | COMPOSITE MOTOR |

73 THIRD CORE

[FIG. 4]

13 STATOR
15 FIRST ROTOR
17 SECOND ROTOR
73 THIRD CORE

[FIG. 5]

51 FIRST ROTATION SHAFT
81 COMPOSITE MOTOR
91 FIRST CORE
93 SECOND CORE
95 THIRD CORE
97 SECOND ROTATION SHAFT
99 FIRST NEEDLE BEARING
101 SECOND NEEDLE BEARING

[FIG. 6]

83 FIRST ROTOR
85 SECOND ROTOR
87 STATOR

[FIG. 7]

203 STATOR
205 OUTER ROTOR
207 INNER ROTOR

[NAME OF THE DOCUMENT] ABSTRACT

[SUMMARY]

[PROBLEM]

To provide a motor with a plurality of rotors which disposes a plurality of rotors separated lengthwise and which allows application of a cylindrical rotors.

[MEANS FOR SOLUTION

A plurality of stators 14A, 14B are disposed to respectively face a plurality of rotors 2, 3 which have a differing number of pairs of magnetic poles and rotate independently. The electrical phase number of the respective stators is equal and the electrical phase drives the motors with a composite total of each current which corresponds to the plurality of rotors. Thus the plurality of rotors 2, 3 and stators 14A, 14B do not use common magnetic circuits. Although mutually independent motors are formed, the plurality of rotors are rotated at the same time and at differing speeds by supplying a composite current from the common inverter 112 to the plurality of stators. In this manner, it is possible to use a cylindrical member as the plurality of rotors and to increase a rotation speed. Since it is possible to dispose the plurality of rotors lengthwise, it is possible to maintain magnetic properties for long periods without creating a demagnetization effect amongst the permanent magnets of the rotors.

[SELECTED FIGURE] Fig. 1

[DESCRIPTION OF THE FIGURES]

[Fig. 1]

[a]

11A CORE
18FIXING PIN

[b]

1CASE
2FIRST ROTOR
3SECOND ROTOR
4A SHAFT
5B SHAFT
11A CORE
21FIXING RING
22FIXING RING
25STRENGTHING RING

[FIG. 2]

111BATTERY
112 MULTIPHASE INVERTER
113SENSOR (1) INPUT
114SENSOR (2) INPUT
115INVERTER CONTROL CIRCUIT
指令入力(トルク・速度etc)COMMAND INPUT (TORQUE, SPEED ETC)
PWM 信号PWM SIGNAL

[FIG. 3]

[a]

11A CORE
12B CORE
30YOKE

[B]

1CASE
2FIRST ROTOR
3SECOND ROTOR
4A SHAFT

5B SHAFT
11A CORE
12 B CORE

[FIG. 4]

111BATTERY
112 MULTIPHASE INVERTER
113SENSOR (1) INPUT
114SENSOR (2) INPUT
115INVERTER CONTROL CIRCUIT
指令入力(トルク・ 速度etc)COMMAND INPUT (TORQUE, SPEED ETC)
PWM 信号PWM SIGNAL

[FIG. 5]

111BATTERY
112 MULTIPHASE INVERTER
113SENSOR (1) INPUT
114SENSOR (2) INPUT
115INVERTER CONTROL CIRCUIT
指令入力(トルク・ 速度etc)COMMAND INPUT (TORQUE, SPEED ETC)
PWM 信号PWM SIGNAL